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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,202

11/20/2003

Ryosaku Inamura

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9823

7590

12/27/2005

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EXAMINER

MILLER, BRIAN E

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,202	Applicant(s) INAMURA ET AL.	
	Examiner Brian E. Miller	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 is/are allowed.
- 6) ☒ Claim(s) 1-4, 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 1-10 are now pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/12/05 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al (US 5,815,342) in view of Fukuichi (JP 02-227814).

Akiyama et al discloses a perpendicular magnetic recording medium 20, as shown in at least FIGs. 1 & 2, including at least: a perpendicular magnetic recording layer 23 and a backing layer

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22 backing said perpendicular magnetic recording layer, said backing layer having an in-plane magnetization (see col. 7, lines 8-10), characterized in that said backing layer is formed of a ferrimagnetic material having a compensation temperature. Since the specific temperature and/or the material as set forth in the claim, e.g., GdFe alloy, has not been recited in Akiyama et al, it is considered that the "compensation temperature" being within the vicinity of a recording/reproducing temperature in which reproducing of magnetic information is made from said perpendicular magnetic recording layer has not been expressly taught by Akiyama et al.

Fukuichi, discloses a perpendicular magnetic recording medium including a ferrimagnetic backing layer 2 which is formed of a GdFe alloy, e.g., GdFeCo, which material would provide the aforementioned proper "compensation temperature" (see CONSTITUTION-first 4 lines).

From this teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the CoZrNb backing layer of Akiyama et al with the backing layer formed of GdFeCo, as taught by Fukuichi. The motivation would have been: lacking any unobvious or unexpected results, substituting one well-suited material for another similar material, would have resulted from routine engineering experimentation. Furthermore, as taught by, Fukuichi, a high-density perpendicular recording medium would be generated.

Still further, (as per claim 2) wherein the recording/reproducing temperature is -20 to 100 degrees C is considered to encompass a typical recording/reproducing temperature; (as per claim 3) wherein the ferrimagnetic material is any of an alloy of GdFe system, an alloy of DyFe system and a garnet ferrite (as discussed, supra); (as per claim 4) wherein the perpendicular magnetic recording layer is any of a single layer perpendicular magnetic film or a multilayer perpendicular magnetic film, i.e., Akiyama et al at least would encompass the single layer perpendicular

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magnetic layer configuration. Claim 10 is also considered to be encompassed by Akiyama (see col. 7, lines 8-10).

Response to Arguments

5. Applicant's arguments filed 12/12/05 have been fully considered but they are not persuasive.

A...Applicant asserts on pages 5-6 of the "Remarks" that there is no motivation to combine the references since the backing layer of Fukuichi is magnetized perpendicularly to the base, i.e., not "in-plane" as in the present invention.

It is noted that applicant's arguments are directed against the reference to Fukuichi individually, as such, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As set forth in the previous Office Action, this argument is found unpersuasive. The Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Fukuichi is utilized to teach a perpendicular recording medium which uses a ferromagnetic material having a compensation temperature, e.g., an alloy of GdFe, such that the magnetic anisotropy is improved. As discussed in the rejection above, Akiyama et al also discloses a

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perpendicular recording medium, however, does not expressly disclose a backing layer being formed of a ferromagnetic material having a compensation temperature. Akiyama is already considered to teach that the backing layer has an in-plane magnetization. The modification of the backing layer of Akiyama with that of Fukuichi would not destroy the in-plane magnetization that Akiyama's backing layer.

It is considered that the teachings of Fukuichi would have been very pertinent to skilled artisans in the perpendicular recording art, such that materials having known favorable magnetic characteristics would have been readily provided for in other perpendicular recording media, as established herein. The combination of references is thus considered proper and is maintained.

Allowable Subject Matter

5. Claims 5-9 are allowable over the prior art of record. The addition of "temperature changing means for heating or cooling the backing layer" is considered to read over the prior art of record.

Conclusion

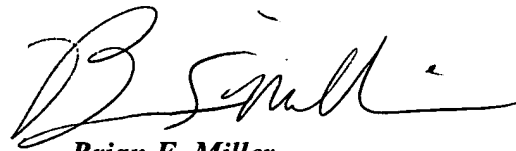
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (571) 272-7578. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "B. E. Miller", with a stylized flourish at the end.

Brian E. Miller
Primary Examiner
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BEM
December 21, 2005